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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Shunichi Osada

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EXAMINER

KHATRI, PRASHANT J

ART UNIT

PAPER NUMBER

1783

NOTIFICATION DATE

DELIVERY MODE

07/26/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/594,593	Applicant(s) OSADA ET AL.	
	Examiner PRASHANT J. KHATRI	Art Unit 1783	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-14 and 16-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-14 and 16-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

In response to Arguments/Amendments filed 4/30/2010. Claims 1-3, 5-14, and 16-37 are pending.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-3, 5-14, and 16-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hebrink et al. (**US 20010019182**) with evidence from Arends et al. (**US 5360659**) in view of Weber et al. (**US 6025897**).
3. Hebrink et al. disclose a method and apparatus for forming several embodiments and stacking schemes for polymers of different or similar structures that may be used for various types of films such as mirrors, polarizers, and the like. Prior art discloses an alternate stacking scheme comprising two different resins (**para. 0076**). Regarding the resins, prior art discloses the resins may be PET as the first resin and preferably a copolyester based on PET (**para. 0050**). In terms of the copolyester, prior art discloses one such copolyester as Eastar™, a copolyester believed to comprise cyclohexanedimethylene diol units and terephthalate units (**para. 0057**). Examiner notes that the material Eastar™ is used in the present invention and therefore must contain the above units. Concerning the presently claimed difference in reflectance before and after heat-setting, it is noted that PET retains birefringence after stretching

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and has little or no absorbance within the visible range (**para. 0044**). Prior art additionally discloses that a heat-setting treatment after casting improves dimensional stability and reduces shrinkage (**para. 0131**). Therefore, Examiner takes the position that the PET/coPET or PET/ Eastar™ resin scheme would inherently retain the optical properties prior to and post heat treatment because of the above reasoning and the materials disclosed are the same as that presently claimed. Concerning the alternating scheme and the 5 layers of each resin presently claimed, prior art incorporates by reference US 5360659 as showing a suitable film [0080], in which one embodiment (**FIG. 2 of 5360659**), which shows 5 layers of each of resins A and B that are alternating. Regarding the unevenness, prior art discloses that the film uniformity is controlled by process conditions such as rheological matching, feedblock design, multiplier design, temperature, casting wheel speed and the like (**para. 0138**). Furthermore, prior art discloses that the control of such parameters yields a film that controls light transmission or reflected at a particular bandwidth varying by less than 1 or 2 nm over an area (**para. 0145**). Examiner takes the position that the film would maximize uniformity and within the presently claimed range of unevenness. Further, the reflectance would vary therefore less than the presently claimed 5% to 10%.

Concerning claims 10-12, prior art discloses the various layers in the film have different thicknesses across the film forming a gradient. Prior art further discloses one common layer thickness gradient is linear wherein the thicker layers are a certain percent thicker than the thickness of the thinnest layers (**para. 0085**). An example given is a ratio of 1.055:1, which is within the presently claimed ratio (**para. 0085**).

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Examiner considers the above as having a gradient from thicker to thinner. Further, it is noted that the "layer thickness could decrease, increase, decrease again from one major surface of the film to the other" (**para. 0085-0086**). The reasoning behind this gradient is to provide sharper band edges. Regarding claims 13 and 14, prior art discloses several embodiments wherein the film made by this method suppresses second, third, and fourth order harmonics in reflection bands (**para. 0083-84**).

Additionally, since the thickness ratio is within the presently claimed range, Examiner takes the position that reflectance of higher orders would be inherently less than 30%.

Concerning claim 25, prior art discloses film stacks of made from the method may comprise color variations by means of embossing and other methods known within the art (**para. 0146-0151**). In regards to claims 20-23, Prior art further discloses skin layers comprising of PET and other like materials may be applied to the optical stack (**para. 0161**). Further, the skin layer may comprise silica particles in which both the thickness of the skin layer and size of particle are such that the optical properties of the optical stack are not comprised (**para. 0157**). It is further noted that the skin layer is a thickness of 2% to about 50% without comprising optical properties (**para. 0159**).

Examiner takes the position that the value would encompass the presently claimed thickness values. Regarding the use of adhesives, prior art discloses adhesives that are disposed onto a surface wherein said adhesives are optically clear in the wavelength region the film is designed to be transparent in (**para. 0164**). Examiner takes the position that the above disclosures deem the presently claimed elements as being optimizable features that one of ordinary skill in the art would have known at the

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time of invention to vary as not to disrupt or severely impact optical properties of film.

The dimensions of the particles and the thickness of both the adhesive and skin layer are known to be optimizable features. Hebrink et al. discloses the above wherein the particle-containing skin layer imparts abrasion resistance yet maintains optical properties (**para. 0157**). Further the adhesive allows the optical film to be disposed onto various different surfaces yet has a thickness to maintain the optical properties desired for the application (**para. 0164**). The motivation to apply an adhesive and a skin layer containing particles is to create a removable film that imparts abrasion-resistance to the structure.

Examiner further takes the position that the abrasion-resistance is optimized by the loading value of the particles to prevent scratches and the mere measurement of abrasion is simply an inherent feature of the particles. The courts have held that “a compound and all its properties are mutually inseparable”, *In re Papesch*, 315F.2d 381, 137 USPQ 42, 51 (CCPA 1963). Further, attention is drawn to MPEP 2112.01, which states that “products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). It is also noted that the loading value is a feature that is balanced between optical properties and abrasion resistance. Thus, it would have been obvious to one of ordinary skill in the art to have thickness and particle sizes as not to comprise optical properties yet still include abrasion-resistance and allow removability of

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the optical film. Regarding claims 27-32, prior art discloses the films may be made into various types of films and optical devices for different applications (**para. 0173-200**).

Regarding claim 32 specifically, Examiner takes the position that the above is a use claim and treated as such.

Concerning claims 19, 26, and 33-36, Examiner takes the position that the properties, although not explicitly disclosed by prior art, are considered to be inherent features of the film because the materials disclosed by prior art are the same as those presently claimed. The courts have held that “a compound and all its properties are mutually inseparable”, *In re Papesch*, 315F.2d 381, 137 USPQ 42, 51 (CCPA 1963). Further, attention is drawn to MPEP 2112.01, which states that “products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Prior art further discloses the use of multipliers and feedbacks to form multi-layer optical films (**para. 0088-0091**). However, prior art is silent to the number of layers presently claimed and reflectance.

4. Weber et al. disclose an alternating two-resin optical stack that may be comprised of the same resins disclosed by Hebrink (**col. 4, lines 40-49; col. 21, lines 1+**). Prior art discloses the transmission of the optical film is less than 10% (**col. 18, lines 27+**). It is known within the art that a rough estimation of reflectance is found by the following formula: 100% minus the transmission, which would yield a reflectance

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value. Therefore, examiner takes the position that the reflectivity in this case would be greater than 90%. Regarding the number of layers and thickness presently claimed, Examiner takes the position that the thickness of each layer would be optimizable depending on the application as it is known within the art that optical properties may be tuned by varying both (**col. 22, lines 6+**). Further, it is noted that prior art discloses the number of layers within the stack is less than 2000 (**col. 22, lines 6+**).

5. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Hebrink discloses a method and apparatus for forming multilayer optical film stacks by means of multiplier. However, prior art is silent to the presently claimed number of layers. Weber et al. disclose that the number of layers is optimizable in both thickness and number to achieve the desired optical properties. Therefore, it would have been obvious to one of ordinary skill in the art to vary both the thickness and the number of layers to achieve the optical properties desired yet still maintaining the versatility of the film materials.

Response to Amendment

6. The declaration under 37 CFR 1.132 filed 4/30/2010 is insufficient to overcome the rejection of claims 1-3, 5-14, and 16-37 based upon the 35 USC 103(a) rejection under Hebrink with evidence from Arends in view of Weber as set forth in the last Office action because the showing is not commensurate in scope with the claims. The declaration as presented is regarding specific polyesters at specific quantities and reflectance peaks at specific ranges. Given the independent claim recites broadly

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"thermoplastic resin A" and "thermoplastic resin B" wherein "thermoplastic resin B" has a basic skeleton that is the same as that of "thermoplastic resin A", the declaration has not shown the same for all thermoplastic resins and copolymers thereof. Furthermore, regarding claim 33, it is noted that the reflectance peak at the primary band within the showing is for a specific subset at a specific number of layers and not the broadly recited reflectance at a range from 300 nm to 2500 nm. Concerning claim 37, it is noted that the declaration is silent to the absorption band. As such, the rejections are maintained.

Response to Arguments

7. Applicant's arguments filed 4/30/2010 have been fully considered but they are not persuasive. Applicant asserts that unexpected results are found due to the processing. Examiner notes that the showing is insufficient to overcome the previous rejection due to the showing being not commensurate in scope with the present claims. Furthermore, Examiner notes that Hebrink discloses a variety of feedblock designs and states that the design of the feedblock and processing variables affect the resulting properties including Lewis et al. which discloses a feedblock comprising a plurality of slits wherein a number of separating vanes are positioned to divide the layered streams. Given that Hebrink discloses that the precision of layer thickness can be optimized, one of ordinary skill in the art would have been able to achieve the presently claimed optical properties. Regarding Applicant's assertion regarding the uniaxially stretched, it is

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noted that in order to reduce optical distortions, the films may be biaxially stretched. As such, the rejections are maintained.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lewis et al. (**US 5389324**) discloses a feedblock (**FIGS. 6-7b**) comprising a plurality of slits wherein a number of separating vanes are positioned to divide the layered streams into substreams of different materials and then result in a number of different layers.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRASHANT J. KHATRI whose telephone number is

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(571)270-3470. The examiner can normally be reached on M-F 8:00 A.M.-5:00 P.M.
(First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patricia L. Nordmeyer/
Primary Examiner, Art Unit 1783

PRASHANT J KHATRI
Examiner
Art Unit 1783